AFIFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:			
	Donald W. Verser et al.	Group Art Unit:	1713
Serial No.:	10/699,095		
		Examiner:	Lu, C. Caixia
Filed:	October 31, 2003		
For:	Separation of Polymer Particles and Vaporized Diluent in a Cyclone	Atty. Docket:	CPCM:0016/FLE 210441US00

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION OR MAILING
37 C.F.R. 1.8

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office in accordance with 37 C.F.R. 1.6(d) or is being deposited with the U.S. Postal Service as First Class Mail in an envelope with sufficient postage addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, Alexandria, VA 22313, on the date below:

October 1, 2007 — Floron C. Faries
Date — Floron C. Faries

APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 41.31 AND 41.37

This Appeal Brief is being filed in furtherance to the Notice of Appeal mailed on July 27, 2007, and received by the Patent Office on July 30, 2007. The Commissioner is authorized to charge the requisite fee of $500.00, and any additional fees that may be necessary to advance prosecution of the present application, to the credit card listed on the attached PTO-2038. However, if the PTO-2038 is missing, if the amount listed thereon is insufficient, or if the amount is unable to be charged to the credit card for any other reason, the Commissioner is authorized to charge Deposit Account No. 06-1315, Order No. CPCM:0016/FLE (210441US00).

10/05/2007 EAYALEW1 00000052 061315 10699095
01 FC:1402 10.00 DA 500.00 OP

1. **REAL PARTY IN INTEREST**

The real party in interest is Chevron Phillips Chemical Company, LP, the Assignee of the above-referenced application by virtue of the Assignment to Chevron Phillips Chemical Company, LP, recorded at reel 015102, frame 0403, and dated March 5, 2004. Accordingly, Chevron Phillips Chemical Company, LP will be directly affected by the Board's decision in the pending appeal.

2. **RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellants' legal representative in this Appeal.

3. **STATUS OF CLAIMS**

Claims 1, 15, 28-31, 33, and 36-42 are currently under final rejection and, thus, are the subject of this Appeal. Claims 2-14, 16-27, 32, 34, and 35 have been cancelled.

4. **STATUS OF AMENDMENTS**

All amendments in relation to the claims of the present patent application have been entered, and no amendments have been submitted or entered subsequent to the Final Office Action mailed on February 27, 2007.

5. **SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates generally to the polymerization of olefin monomers in a liquid medium. Application, page 1, ¶ 2, lines 13 and 14. The present application

contains three independent claims, namely, claims 1, 28, and 37, all of which are the subject of this Appeal. The subject matter of these claims is summarized below.

Independent claim 1 recites a process for producing solid polymer particles, the process including: polymerizing, in a loop reaction zone (e.g., loop reactor 10), at least one monomer (e.g., ethylene) to produce a fluid slurry comprising solid polymer particles (e.g., polyethylene) in a liquid medium (e.g., diluent and ethylene); withdrawing substantially continuously a portion of the slurry (e.g., via continuous take-off mechanism 34), comprising withdrawn liquid medium and withdrawn solid polymer particles, as an intermediate product of the process; passing the intermediate product through a heated conduit (e.g., flashline conduit 36 having surrounding conduit 40), producing a concentrated intermediate product (e.g., polyethylene solids and liquid diluent) and a vapor (e.g., diluent and ethylene); and separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone (e.g., cyclone 68). *See, e.g.*, Application, page 4, ¶ 23, lines 28 and 29; page 6, lines 1-34; page 7, ¶ 23, lines 10-25; page 8, line 11 – page 9, line 32 ("Alternatively, the flashline heater may discharge to a *cyclone* that separates vaporized diluent from polymer solids.") (emphasis added); page 14, line 12 – page 15, line 29; page 16, ¶ 57, lines 8-13 ("The cyclone 68 can be operated at a pressure and temperature similar to those used for high pressure flash chambers.")

Independent claim 28 recites a process, including: polymerizing at least one monomer in a reactor (e.g., loop reactor 10) to produce a slurry comprising solid polymer particles (e.g., polyethylene) and a liquid (e.g., diluent and ethylene); withdrawing substantially continuously via a valve (e.g., proportional motor valve 58) a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration greater than the solids concentration of the slurry in the reactor; modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor; passing the discharge slurry from the reactor through a heated conduit (e.g., flashline conduit 36 having surrounding conduit 40) to vaporize at least a majority of the liquid in the discharge slurry; and separating vapor (e.g., vaporized diluent and vaporized unreacted monomer) from the heated discharge slurry via centrifugal forces (e.g., in cyclone 68). *See, e.g.*, Application, page 4, ¶ 23, lines 28 and 29; page 6, lines 1-34; page 7, ¶ 31, lines 10-25; page 8, line 11 – page 9, line 32; page 14, line 12 – page 15, line 29; page 16, ¶ 57, lines 8-13 and ¶ 58, lines 24-28.

Independent claim 37 recites a process, including: polymerizing at least one monomer (e.g., ethylene) in a reactor to produce a slurry comprising solid polymer particles (e.g., polyethylene) and a liquid (e.g., diluent and ethylene); withdrawing substantially continuously via a valve (e.g., proportional motor valve 58) a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration

greater than the solids concentration of the slurry in the reactor; modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor; passing the discharge slurry from the reactor through a heated conduit (e.g., flashline conduit 36 having surrounding conduit 40) to vaporize at least a majority of the liquid in the discharge slurry; and separating a vapor (e.g., vaporized diluent and vaporized unreacted monomer) from the heated discharge slurry in a separator (e.g., flash chamber 38, cyclone 68). *See, e.g.*, Application, page 4, ¶ 23, lines 28 and 29; page 6, lines 1-34; page 7, ¶ 31, lines 10-25; page 8, line 11 – page 10, line 2 (explaining "pressure control of the liquid full system [in the reactor] with a valve," and that "proportional motor valve 58 being used to control the rate of continuous withdrawal to maintain the total reactor pressure within designated et points."); page 14, line 12 – page 15, line 29; page 16, ¶ 57, lines 8-13 and ¶ 58, lines 24-28.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

First Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner's first ground of rejection in which the Examiner rejected claims 1, 15, 28-31, 33, and 36-42 under 35 U.S.C. § 103(a) as being unpatentable over Kendrick et al. (U.S. 6,204,344) (hereinafter "Kendrick") in view of Hanson (U.S. 5,597,892) (hereinafter "Hanson '892").

Second Ground of Rejection to Review or Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner's second ground of rejection in which the Examiner rejected claims 1, 15, 28-31, 33, and 36-42 under 35 U.S.C. § 103(a) as being unpatentable over Tormaschy et al. (EP 0 432 555 A2) in view of Hanson '892.

7. ARGUMENT

As discussed in detail below, the Examiner has improperly rejected the pending claims. Further, the Examiner has misapplied long-standing and binding legal precedents and principles in rejecting the claims under Section 103. Accordingly, Appellants respectfully request full and favorable consideration by the Board, as Appellants strongly believe that claims 1, 15, 28-31, 33, and 36-42 are currently in condition for allowance.

First Ground of Rejection - 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejected claims 1, 15, 28-31, 33, and 36-42 under 35 U.S.C. § 103(a) as being unpatentable over Kendrick et al. (U.S. Patent No. 6,204,344) in view of Hanson (U.S. Patent No. 5,597,892). Appellants respectfully traverse this rejection. As repeatedly explained during examination of the present application, the cited *Kendrick reference is not prior* art with regard to the present claims because the present claims have an earlier effective filing date than Kendrick. The present claims are fully supported by the parent Hottovy, U.S. Patent No. 6,239,235,

which has a filing date July 15, 1997. *See, e.g.*, Hottovy, col. 2, lines 11-14 and 60-67; col. 3, lines 7-9 and 40-59; col. 4, lines 32-36; col. 5, lines 6-11; Hanson '341, col. 3, lines 15-28; col. 4, lines 9-12. No present claims require support from information added in the present continuation-in-part filed October 31, 2003. Moreover, the parent (Hottovy '235) incorporates by reference Hanson (U.S. Patent No. 4,424,341) (hereinafter "Hanson '341") which can support the present claims. *See* 37 C.F.R. § 1.57(f).

Based on the face of the Kendrick reference (U.S. Patent No. 6,204,344), the Kendrick filing date is May 18, 1999, and the apparent priority date is March 19, 1999. Consequently, as stated, Kendrick is not prior art with regard to the present claims. Thus, the present rejection, which is based on a combination of the *Kendrick* and Hanson '892 references, should be withdrawn, and the claims allowed.

In the Response to Arguments section of the Final Office Action, the Examiner disagreed, stating that "the current pending claims are only support [sic] by the specification of the current application [the present CIP] rather than fully supported by the specification of a parent, Hottovy (6,239,235), which includes the incorporated Hanson (US 4,424,341)." *See* Final Office Action, page 2 (emphasis in original). The Examiner apparently gave two reasons in asserting incorrectly that the present claims have the later filing date of the present CIP and not of the parent Hottovy 6,239,235. *See id.* at pages 2-3.

First, the Examiner contended that "Hottovy's specification only disclosed an olefin polymerization process, and the monomer polymerization process without the [sic] any limitation to the monomer is only disclosed in the current specification." *See id.* at page 2 (emphasis in original). However, based on the plain language of the claims, the disclosure and context provided by the Hottovy '235 specification, and the ordinary meaning of "monomer" in the relevant art, the skilled artisan would reasonably conclude that Appellants had possession of the recited invention. *See, e.g., Moba, B.V. v. Diamond Automation, Inc.*, 66 U.S.P.Q.2d 1429, 1438 (Fed. Cir. 2003) (explaining that for an applicant to satisfy the written description requirement, one skilled in the art need only reasonably conclude that the inventor had possession of the claimed invention in view of the specification); M.P.E.P. § 2163, page 2100-165 (Rev. 5, Aug. 2006); *see also Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1326 (Fed. Cir. 2005) (explaining that one should rely heavily on the written description for guidance as to the meaning of the claims). "The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *See Collegenet, Inc. v. ApplyYourself, Inc.*, 75 U.S.P.Q.2d 1733, 1738 (Fed. Cir. 2005) (quoting *Phillips* at 1326) (holding that derivation of a claim term must be based on "usage in the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art").

Second, the Examiner contended that "Hottovy together with Hanson '341 requires separation of the polymer slurry intermediate product by a flash tank first and

then further separates the liquid portion of the polymer slurry by a cyclone rather than separating the polymer slurry intermediate product in a cyclone directly as required by claims 1, 15, 28-31, 33, and 36." *See* Office Action, page 3 (emphasis in original). To the contrary, Hanson '341 states "there are many variations of the illustrated embodiment which fall within the scope of the invention." *See* Hanson '341, col. 4, lines 3-5. Appellants believe this accommodation of many variations, combined with the express example in Hanson of placing the cyclone 25 in the flash chamber 20, provides for processing (including the "direct" processing) of the polymer slurry intermediate product via the cyclone 25. *See* Hanson '341, col. 4, lines 9-12.

Moreover, while Appellants believe the *direct* processing of the intermediate product via a cyclone is supported by Hottovy '235 (and the incorporated Hanson '341), the claims do not expressly recite the "direct" processing of the intermediate product in a cyclone. For example, claim 1 recites "separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone," and claim 28 recites "separating vapor from the heated discharge slurry via centrifugal forces." One of ordinary skill in the art would plainly understand that the disclosed configuration of a cyclone placed inside the flash chamber supports this claim language. To be sure, a cyclone placed in the flash chamber provides for "separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone," as recited in claim 1. The combined configuration of a cyclone and flash chamber (typically having a tangential entry as

known by the skilled artisan) provides for "separating vapor from the heated discharge slurry via centrifugal forces," as recited in claim 28.

It should also be noted that the intermediate product exiting the upstream flash line (which transports the intermediate product from the reactor) consists primarily of solids and vapor with little or no liquid. Indeed, the intermediate product is subjected to heat and de-pressure as it travels through the flash line, and most or all of the liquid in the intermediate product exiting the reactor is vaporized in the flash line. In this example, one of ordinary skill in the art would plainly understand that at least a significant portion of the entering intermediate product is processed by a cyclone placed inside the flash chamber.

It should be further noted that independent claim 37 is not limited to a cyclone or separation via centrifugal forces, but instead recites "separating a vapor from the heated discharge slurry in a *separator*." (Emphasis added). Appellants respectfully assert that the Examiner has not fully address the subject matter of claim 37. Lastly, Appellants note that the Examiner apparently misunderstands the technology in asserting that Hottovy '235 together with Hanson '341 requires that "the *liquid* portion of the polymer slurry" be separated "by a cyclone." *See* Office Action, page 3 (emphasis added). There is absolutely no basis for this technical assertion. In conclusion, Appellants believe the cited Kendrick reference is not prior because the effective filing date of the present

claims is the same as the parent Hottovy '235, and therefore, the foregoing rejection should be withdrawn.

Lastly, cited support for the present independent claims by the parent Hottovy '235 (having incorporated Hanson '341) is tabulated below.

1. A process for producing solid polymer particles, the process comprising:

polymerizing, in a loop reaction zone, at least one monomer to produce a fluid slurry comprising solid polymer particles in a liquid medium; *(see, e.g., Hottovy 6,239,235, col. 1, lines 4-5; col. 3, lines 39-41; col. 8, lines 2-6).*

withdrawing substantially continuously a portion of the slurry, comprising withdrawn liquid medium and withdrawn solid polymer particles, as an intermediate product of the process; *(see, e.g., Hottovy 6,239,235, col. 8, lines 11-13).*

passing the intermediate product through a heated conduit, producing a concentrated intermediate product and a vapor; and *(see, e.g., Hottovy 6,239,235, col. 4, lines 32-41).*

separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone. *(see, e.g., Hottovy 6,239,235, col. 4, lines 51-54; Hanson 4,424,341, col. 3, lines 15-32; col. 4, lines 9-12).*

28. A process, comprising:

polymerizing at least one monomer in a reactor to produce a slurry comprising solid polymer particles and a liquid; *(see, e.g., Hottovy 6,239,235, col. 1, lines 4-5; col. 3, lines 39-41; col. 8, lines 2-6).*

withdrawing substantially continuously via a valve a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration greater than the solids concentration of the slurry in the reactor; *(see, e.g., Hottovy 6,239,235, col. 2, line 3 – col. 3, line 7; col. 4, lines 27-31).*

modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor; *(see, e.g., Hottovy 6,239,235, col. 5, lines 1-12).*

passing the discharge slurry from the reactor through a heated conduit to vaporize at least a majority of the liquid in the discharge slurry; and *(see, e.g., Hottovy 6,239,235, col. 4, lines 32-41).*

separating vapor from the heated discharge slurry via centrifugal forces. *(see, e.g., Hottovy 6,239,235, col. 4, lines 32-54; Hanson 4,424,341, col. 3, lines 15-32; col. 4, lines 9-12).*

37. A process, comprising:

polymerizing at least one monomer in a reactor to produce a slurry comprising solid polymer particles and a liquid; *(see, e.g., Hottovy 6,239,235, col. 1, lines 4-5col. 3, lines 39-41; col. 8, lines 2-6).*

withdrawing substantially continuously via a valve a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration greater than the solids concentration of the slurry in the reactor; *(see, e.g., Hottovy 6,239,235, col. 2, line 3 – col. 3, line 7; col. 4, lines 27-31).*

modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor; *(see, e.g., Hottovy 6,239,235, col. 5, lines 1-12).*

passing the discharge slurry from the reactor through a heated conduit to vaporize at least a majority of the liquid in the discharge slurry; and *(see, e.g., Hottovy 6,239,235, col. 4, lines 32-41).*

separating a vapor from the heated discharge slurry in a separator. *(see, e.g., Hottovy 6,239,235, col. 4, lines 32-54; Hanson 4,424,341, col. 3, lines 15-32; col. 4, lines 9-12).*

Second Ground of Rejection - 35 U.S.C. § 103(a)

The Examiner also rejected claims 1, 15, 28-31, 33, and 36-42 under 35 U.S.C. § 103(a) as being unpatentable over Tormaschy et al. (EP 0 432 555 A2) in view of respectively Hanson (U.S. Patent No. 5,597,892) and Hanson et al. (U.S. Patent No. 4,424,341). Appellants respectfully traverse this rejection.

Legal Precedent

During patent examination, the pending claims must be given an interpretation that is reasonable and consistent with the specification. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *see also* M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, No. 03-1269, -1286, at 13-16 (Fed. Cir. July 12, 2005) (citations omitted). Interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *See In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); M.P.E.P. § 2111. "The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *See Collegenet, Inc. v. ApplyYourself, Inc.*, No. 04-1202, -1222, 1251, at 8-9 (Fed. Cir. August 2, 2005) (quoting *Phillips*).

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish a *prima facie* case, the Examiner must show that a combination of references

includes *all* of the claimed elements, *and* also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *See Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Moreover, the Supreme Court has stated that the obviousness analysis should be explicit. *See KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350, page 14 (U.S., decided April 30, 2007). "[R]ejections based on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *See id.* (quoting *In re Kahn,* 441 F.3d 977,988 (Fed. Cir. 2006)).

Furthermore, if the Examiner relies on a theory of inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *In re Robertson,* 169 F.3d 743, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999) (emphasis added). The Examiner, in presenting the inherency argument, bears the evidentiary burden and must adequately satisfy this burden. *See id.*

Deficiencies of the Rejection

All independent claims 1, 28, and 37 recite a continuous withdrawal of slurry from the loop reaction zone. The Examiner relied on Tormaschy to teach this feature. However, Tormaschy is completely silent with regard to a continuous withdrawal (e.g., continuous take-off) of slurry from the loop reactor. *See, e.g.*, Tormaschy, page 5, lines

40-43; Figure 1. Indeed, based on the date of the reference and on Appellants' understanding of the Tormaschy patent, Appellants believe that the Tormaschy systems incorporate the typical settling leg configuration, and not a continuous withdrawal from the reactor. The previously-submitted (and attached herein) Declaration of John D. Hottovy under 37 C.F.R. § 1.132 further clarifies that Tormaschy does not disclose or even contemplate a continuous withdrawal. Further, the two Hanson references (Hanson '341 and Hanson '892) do not obviate this deficiency of Tormaschy. Therefore, all claims are patentable over the cited combination.

It should be noted that Tormaschy is directed to measurement and control of solids in a loop reactor. *See* col. 5, lines 53-58. Again, the reference is completely silent with regard to a continuous withdrawal (e.g., continuous take-off) of slurry from the loop reactor, as recited in all independent claims. *See, e.g.*, Tormaschy, page 5, lines 40-42; Specification, page 2, ¶ 7. The reference merely mentions that "[t]he reactor effluent is withdrawn from reactor 11 through conduit 23 and is passed to the flash tank 25." *See* Tormaschy, page 5, lines 40-43; Figure 1. The conduit 23 is depicted as a straight line in Figure 1 with no accompanying text in reference that describes the nature of the slurry discharge or its design and operation. *See* page 5, lines 40-43 (failing to disclose a continuous take-off of the reactor slurry).

This is not surprising because, as mentioned, the reference is concerned with the measurement/control of solids concentration *in* the *loop reactor*, and makes no

correlation between the design/operation of the reactor discharge with the proposed control of solids inside the loop reactor. *See* col. 5, lines 53-58. One would assume that if the reference contemplated a continuous discharge, the reference would at least address the modulating impact of a continuous discharge on the solids control-scheme proposed in the reference.

Further, as discussed in the present specification and as claimed in independent claims 28 and 37, the recited continuous discharge is regulated to control pressure in the reactor, while maintaining generally constant the diluent feed rate to the loop reactor in steady-state, quite the opposite of the cited reference. *See* Tormaschy, Abstract (discussing manipulation of diluent flow rate). Thus, because Tormaschy does not teach control of reactor pressure via a continuous discharge, it cannot anticipate claims 28 and 37, or their dependent claims for this additional reason.

In sum, due to factors disclosed in the cited reference, such as the complexity of the proposed solids-control scheme, the disclosed manipulation of the reactor feed-stream (e.g., diluent feed) flow rates, the absence of discussion of the reactor discharge, the age of the disclosed polyethylene process technology, and so on, it is plain that the reference can only contemplate a typical settling-leg discharge known in the art at the time of the filing of the reference. It is clear that all claims are patentable over Tormaschy for at least the reason that the reference does not disclose a continuous discharge.

Further, the reference fails to disclose a discharge valve for continuously withdrawing a slurry from the reactor, as recited in claims 28 and 37. This is also not surprising because the reference only contemplates a settling leg discharge. Thus, because Tormaschy does not teach or suggest a valve for continuous withdrawal of slurry, it cannot anticipate claims 28 and 37 for this additional reason.

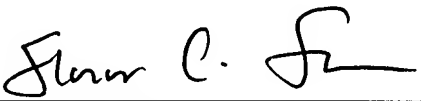
Lastly, the Tormaschy reference also does not teach or suggest continuously withdrawing a slurry having an increase in solids concentration as compared with the slurry in the reactor, as recited in claims 28 and 37. *See* Tormaschy, col. 5, lines 53-58. The two Hanson references do not obviate this deficiency. Therefore, claims 28 and 37, and their dependent claims, are patentable over the cited combination for this reason as well. In view of the foregoing, Appellants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. § 103 abased on Tormaschy and Hanson '892, and allow the claims.

Conclusion

Appellants respectfully submit that all pending claims are in condition for allowance. However, if the Examiner or Board wishes to resolve any other issues by way of a telephone conference, the Examiner or Board is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: October 1, 2007



Floron C. Faries
Reg. No. 59,991
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545

8. APPENDIX OF CLAIMS ON APPEAL

1. A process for producing solid polymer particles, the process comprising:

polymerizing, in a loop reaction zone, at least one monomer to produce a fluid slurry comprising solid polymer particles in a liquid medium;

withdrawing substantially continuously a portion of the slurry, comprising withdrawn liquid medium and withdrawn solid polymer particles, as an intermediate product of the process;

passing the intermediate product through a heated conduit, producing a concentrated intermediate product and a vapor; and

separating the vapor from the concentrated intermediate product by centrifugal force in a cyclone.

15. The process of claim 1, comprising maintaining a concentration of solid polymer particles in the slurry in the zone of greater than 40 weight percent.

28. A process, comprising:

polymerizing at least one monomer in a reactor to produce a slurry comprising solid polymer particles and a liquid;

withdrawing substantially continuously via a valve a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids

concentration greater than the solids concentration of the slurry in the reactor;

modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor;

passing the discharge slurry from the reactor through a heated conduit to vaporize at least a majority of the liquid in the discharge slurry; and

separating vapor from the heated discharge slurry via centrifugal forces.

29. The process of claim 28, wherein separating vapor comprises passing the heated discharge slurry through a cyclone.

30. The process of claim 29, comprising discharging the separated vapor from a top portion of the cyclone.

31. The process of claim 29, comprising discharging a polymer stream comprising solid polymer particles and residual hydrocarbon from a bottom portion of the cyclone.

33. The process of claim 31, comprising passing the polymer stream from the bottom portion of the cyclone to a low-pressure flash tank.

36. The process of claim 1, comprising condensing at least a portion of the separator vapor without compressing the separator vapor.

37. A process, comprising:

polymerizing at least one monomer in a reactor to produce a slurry comprising solid polymer particles and a liquid;

withdrawing substantially continuously via a valve a discharge slurry from the reactor, the discharge slurry comprising withdrawn solid polymer particles and withdrawn liquid, wherein the discharge slurry has a solids concentration greater than the solids concentration of the slurry in the reactor;

modulating the valve to adjust a flow rate of the discharge slurry to facilitate control of a pressure in the reactor;

passing the discharge slurry from the reactor through a heated conduit to vaporize at least a majority of the liquid in the discharge slurry; and

separating a vapor from the heated discharge slurry in a separator.

38. The process of claim 37, comprising maintaining the solids concentration of the slurry in the reactor at 40 weight percent or greater.

39. The process of claim 37, comprising maintaining the solids concentration of the discharge slurry as it is withdrawn from the reactor at 50 weight percent or greater.

40. The process of claim 37, wherein the separator comprises a flash drum.

41. The process of claim 37, wherein the separator comprises a cyclone.

42. The process of claim 37, comprising condensing the separator vapor without compressing the separator vapor.

9. **APPENDIX OF EVIDENCE**

Please see the attached Declaration of John D. Hottovy under 37 C.F.R. § 1.132.

10. **APPENDIX OF RELATED PROCEEDINGS**

None.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Donald W. Verser et al.	§	Group Art Unit: 1713
Serial No.: 10/699,095	§	Examiner: Lu, C. Caixia
Filed: October 31, 2003	§	
For: Separation of Polymer Particles and Vaporized Diluent in a Cyclone	§	Atty. Docket: CPCM:0016/FLE 210441US00

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION OR MAILING
37 C.F.R. 1.8

I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office in accordance with 37 C.F.R. 1.6(d) or is being deposited with the U.S. Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

12/14/2006 Dawn Brown
Date Dawn Brown

Sir:

DECLARATION OF JOHN D. HOTTOVY UNDER 37 C.F.R. § 1.132

I, John D. Hottovy, hereby declare as follows:

1. I am co-inventor of record of the invention disclosed and claimed in the present application referenced above.

2. My residence and business addresses are set forth below, along with my signature.

3. I am a co-inventor of record of European Patent 0 432 555, filed November 26, 1990, and entitled, "Control of Polymerization Reaction."

4. In European Patent 0 432 555, I and the other co-inventors did not teach or suggest the concept of a continuous withdrawal of slurry from the loop reactor. Instead, we contemplated a settling leg configuration, in which withdrawal of slurry from the loop reactor occurs in a discontinuous manner.

5. I declare further that all statements made herein are of my own knowledge, are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Dated: 12/14/06 By: John D. Hottovy

John D. Hottovy

Declarant's Full Name: John D. Hottovy
Country of Citizenship: U.S.A.
Residence Address: 2347 Summit Way Court, Kingwood, Texas 77339 USA
Business Address: Kingwood Technology Center
Chevron Phillips Chemical Company
1862 Kingwood Dr.
Kingwood, Texas 77339 USA